Name:

## pa1106: Factoring with box when $a$ = prime (v5)

### Example

Use the box to factor $2x^2 - 9x - 18$.

Guess and check, based on factor pairs of $-18$, until you find the pair that results in a linear coefficient of $-9$ after combining like terms.

| * | x | −6 |
|---|---|---|
| 2x | $2x^2$ | −12x |
| 3 | 3x | −18 |

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER: $(2x + 3)(x - 6)$

### Question 1

Use the box to factor $5x^2 + 39x + 28$.

| * | x | 7 |
|---|---|---|
| 5x | $5x^2$ | 35x |
| 4 | 4x | 28 |

ANSWER: $(5x + 4)(x + 7)$

## Question 2

Use the box to factor $3x^2 + 16x - 64$.

| * | x | 8 |
|---|---|---|
| 3x | $3x^2$ | 24x |
| – 8 | – 8x | – 64 |

ANSWER: $(3x - 8)(x + 8)$

## Question 3

Use the box to factor $7x^2 - 32x + 16$.

| * | x | – 4 |
|---|---|---|
| 7x | $7x^2$ | – 28x |
| – 4 | – 4x | 16 |

ANSWER: $(7x - 4)(x - 4)$